

IN THE CLAIMS:

1. (Currently Amended) A plant for vacuum metallization of objects treated in batches, comprising: a vacuum chamber; at least one part-carrying system ~~(15)~~ movable inside said vacuum chamber; at least one discharge electrode ~~(5B)~~; at least one diffuser ~~(5A)~~ associated with said discharge electrode for introduction of at least one fluid substance; a housing containing at least partly said discharge electrode and/or said at least one diffuser; wherein said discharge electrode ~~(5B)~~ and said diffuser ~~(5A)~~ are elongated and extend parallel to a longitudinal axis ~~(A-A)~~, and said housing is opened parallel to said axis; characterized in that said housing is arranged inside said vacuum chamber, in an approximately central position.

2. (Currently Amended) Plant according to Claim 1, characterized in that said part-carrying system rotates about an axis of rotation ~~(A-A)~~ inside said vacuum chamber.

3. (Currently Amended) Plant according to Claim 1 ~~or 2~~, characterized in that said housing has the form of a substantially semi-cylindrical wall surrounding at least partially said discharge electrode and said diffuser.

4. (Currently Amended) Plant according to ~~one or more of the preceding claims~~ claim 1, characterized in that said housing is arranged inside said part-carrying system ~~(15)~~.

5. (Currently Amended) Plant according to ~~one or more of the preceding claims~~ claim

1, characterized in that it comprises: a fixed body (~~3~~) cooperating alternately with one or other of two closing hatches (~~11A, 11B~~) so as to define a vacuum chamber; on each of said two hatches a respective part-carrying system (~~15~~) movable inside said vacuum chamber when the plant is in operation; on each of said hatches, at least one high-voltage discharge electrode (~~5B~~); for each hatch (~~11A, 11B~~) at least one diffuser (~~5A~~) supported by the respective hatch in the vicinity of the respective at least one discharge electrode; at least one housing (~~5~~) for the assembly consisting of the discharge electrode (~~5B~~) and the respective diffuser (~~5A~~) being provided on each hatch.

6. (Currently Amended) Plant according to Claim 5, characterized in that said housing (~~5~~), said discharge electrode (~~5B~~) and said diffuser (~~5A~~) of each hatch are located inside the volume defined by the respective hatch, in the vicinity of the longitudinal axis (~~A-A~~) of the vacuum chamber.

7. (Currently Amended) Plant according to Claim ~~5 or 6~~, characterized in that said hatches are hinged with said central body on opposite sides thereof about hinging axes substantially parallel to the axis (~~A-A~~) of the vacuum chamber, said axis being substantially vertical.

8. (Currently Amended) Plant according to ~~one or more of /Claims~~ claim ~~1 to 4~~, characterized in that said vacuum chamber has a frontally closing hatch and a substantially

horizontal longitudinal axis ~~(A-A)~~ and in that said part-carrying system can be inserted into and extracted from said vacuum chamber.

9. (Currently Amended) Plant according to Claim 8, characterized in that said housing ~~(5)~~, said discharge electrode ~~(5B)~~ and said diffuser ~~(5A)~~ have a horizontal extension substantially parallel to the axis ~~(A-A)~~ of said vacuum chamber.

10. (Currently Amended) Plant according to Claim 8 ~~or 9~~, characterized in that said housing ~~(5)~~, said discharge electrode ~~(5B)~~ and said diffuser ~~(5A)~~ are movable with said part-carrying system so as to be inserted into said chamber and extracted therefrom.

11. (Currently Amended) Plant according to Claim 8 ~~or 9~~, characterized in that said housing ~~(5)~~, said discharge electrode ~~(5B)~~ and said diffuser ~~(5A)~~ are mounted on an end of said chamber substantially opposite the hatch for closing thereof.

12. (Currently Amended) Plant according to ~~one or more of the preceding claims~~ claim 1, characterized in that said housing ~~(5)~~ for the assembly consisting of discharge electrode ~~(5B)~~ and diffuser ~~(5A)~~ has the form of an arched surface.

13. (Previously Presented) Plant according to Claim 12, characterized in that said housing has a shape of a cylindrical surface.

14. (Currently Amended) Plant according to Claim 12 ~~or 13~~, characterized in that the discharge electrode ~~(5B)~~ and the diffuser ~~(5A)~~ are arranged inside the arc defined by the cross section of the housing ~~(5)~~.

15. (Currently Amended) Plant according to Claim 14, characterized in that the discharge electrode ~~(5B)~~ is located in the center of the arc of the respective housing ~~(5)~~ and the diffuser ~~(5A)~~ is located in a radially peripheral zone.

16. (Previously Presented) Plant according to at least Claim 5, characterized in that the vacuum chamber defined by said body and by said closing hatches has a substantially cylindrical shape with a circular cross section.

17. (Currently Amended) Plant according to ~~one or more of the preceding claims~~ claim 1, characterized in that said diffuser ~~(5A)~~ has a plurality of calibrated holes distributed along the longitudinal extension of said diffuser ~~(5A)~~ with a diameter increasing from a first end to a second end of said diffuser, the first end of the diffuser being connected to a duct supplying the product to be diffused inside the vacuum chamber and the second end being closed.

18. (Currently Amended) Plant according to ~~one or more of the preceding claims~~ claim 1, characterized in that a second diffuser ~~(5C)~~ for the introduction of a substance in the fluid state is associated with said at least one discharge electrode ~~(5B)~~.

19. (Currently Amended) Plant according to Claim 18, characterized in that said at least one diffuser ~~(5A)~~ has the function of introducing a substance for the formation of a protective layer deposited on the parts treated in the vacuum chamber and said second diffuser ~~(5C)~~ has the function of introducing a gas.

20. (Currently Amended) Plant according to Claim 18 ~~or 19~~, characterized in that said second diffuser ~~(5C)~~ is enclosed in the volume protected by said housing ~~(5)~~.

21. (Currently Amended) Plant according to ~~at least~~ Claim 5, characterized in that, on each of said hatches ~~(11A, 11B)~~, the discharge electrode ~~(5B)~~, the diffuser ~~(5A)~~ and the housing ~~(5)~~ are located in the vicinity of the edge of the hatch which in the closed condition cooperates with the edge of the fixed body ~~(3)~~ so as to form and close said vacuum chamber and in that said housing has a convexity directed toward the axis of rotation ~~(A-A)~~ of the carousel ~~(15)~~.

22. (Currently Amended) Plant according to ~~one or more of the preceding claims~~ claim 1, characterized in that two or more of said housings ~~(5)~~ with corresponding discharge electrodes ~~(5B)~~ and diffusers ~~(5A, 5C)~~ are arranged inside said vacuum chamber.

23. (Currently Amended) Plant according to ~~one or more of the preceding claims~~ claim 1, characterized in that said part-carrying system comprises a carousel rotating about a main

axis of rotation (A-A), and a series of part-carrying devices rotating about respective auxiliary axes parallel to the main axis of rotation, the parts thus being imparted a planetary motion inside the vacuum chamber.